

Name: _____ Date: _____

Speed, Velocity and Acceleration Problems

Part 1: Speed

We know from our notes that speed is calculated with the formula

Speed = Distance/Time. Using this formula calculate the follow speeds.

Show your work.

- 1) A cyclist travels 60.0km in 3 hours. What is the cyclists speed?

- 2) What is the speed of sound if it travels 1500 meters in 4.5 seconds?

- 3) You can walk or ride your bicycle the 5km home from school.
 - a) Calculate your speed for when you walk (time=25m).

 - b) Calculate your speed for when you ride your bike (time = 10 min).

 - c) How much faster do you travel on your bicycle in terms of speed? (Answer like a scholar.)

Part 2: Velocity

We know from our notes that velocity is calculated with the formula $V=d/t$. Using this formula answer the following questions. Show your work were appropriate.

- 1) Which of the following is a measure of velocity?
 - (a) 30 s
 - (b) 30 South
 - (c) 30m/s
 - (d) 30 m/s South

- 2) What is the velocity of a car that travelled 75 km North in 1.5 hours?

- 3) What is the velocity of a plane that travelled 3000 miles West from New York to Los Angeles in 5 hours?

Part 3: Acceleration

We know from our notes that acceleration is calculated with the formula $a = (\text{final velocity} - \text{initial velocity}) / \text{time}$. Using this formula answer the following questions. Show your work.

- 1) A lizard begins running at a velocity of 2 m/s and speed up to 10 m/s in 4 seconds. What is the lizard's acceleration?

2) A runner covers the last straight stretch of a race in 4 s. During that time, he speeds up from 5 m/s to 9 m/s. What is the runner's acceleration in this part of the race?

3) If a Ferrari, with an initial velocity of 10 m/s, and a final velocity of 50 m/s/s in 3 seconds, what is its acceleration?